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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/731,836

12/08/2003

Terry A. Todd

B-294

4419

7590

12/14/2006

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EXAMINER

JOHNSON, EDWARD M

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/731,836

Applicant(s)

TODD ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-17 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bleys et al. US 6,034,149.

Regarding claim 1, Bleys '149 discloses an absorbent comprising dispersed acrylonitrile (see column 3, lines 47-51) and triallyl methylammonium chloride crosslinker (see column 5, lines 52-55).

Regarding claim 8, Bleys '149 discloses combining in solution (see Examples) dispersed acrylonitrile (see column 3, lines 47-51) and triallyl methylammonium chloride (see column 5, lines 52-55), mixing with water (see Example 1), and producing a dry foam (see column 7, lines 30-40).

With respect to claims 1 and 8, Bleys fails to disclose that the dispersion is homogenous.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to disperse homogenously because an ordinary artisan would maximize the dispersal of the acrylonitrile as disclosed to achieve homogeneity.

Regarding claims 2-4, 9-11, and 17, Bleys '149 discloses triallyl methylammonium chloride crosslinker (see column 5, lines 52-55) and up to 5-10 per 100 parts per weight crosslinker (see column 4, lines 10-28), which would suggest up to 90-95 parts acrylonitrile.

Regarding claims 5 and 13, Bleys '149 discloses dispersed acrylonitrile particles (see column 3, lines 47-51) and forming a foam (see column 4, line 10), which would suggest a substantially homogenous and spherical shape to an ordinary artisan, since a sphere would be an obvious form of a "particle" to an ordinarily skilled artisan.

Regarding claims 6-7 and 14-15, a paper substrate would have been obvious to one of ordinary skill in the art because Bleys '149 discloses tampons (see column 1, lines 5-7), which would at least suggest paper and/or fibers.

Regarding claims 12 and 16, Bleys '149 discloses mixing with 70 pbw of water (Example 1), which would at least suggest a water bath.

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3. The disclosure of "triallyl" is deemed to encompass or at least suggest the claimed "trialkyl" (see above). However, in view of Applicant's interpretation that it does not, the following additional ground of rejection is given:

Claims 1-8 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bleys et al. US 6,034,149 in view of Girot et al. US 5,906,734.

Regarding claims 1 and 8, Bleys '149 discloses an absorbent comprising dispersed acrylonitrile (see column 3, lines 47-51) and triallyl methylammonium chloride (see column 5, lines 52-55), mixing with water (see Example 1), and producing a dry foam (see column 7, lines 30-40).

With respect to claims 1 and 8, Bleys fails to disclose that the dispersion is homogenous and "trialkyl".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to disperse homogeneously because an ordinary artisan would maximize the dispersal of the acrylonitrile as disclosed to achieve homogeneity.

Girot '734 discloses "trimethyl" ammonium chloride compound (see Examples 2 and 17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "trimethyl" of Girot as the "triallyl" group of the methylammonium chloride of

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Bleys because Bleys discloses "trialllyl" methylammonium chloride in a sorbent and Girot discloses the trimethyl ammonium chloride for use in preparation of exchange resins for adsorbent applications (see Examples 2 and 17 and column 12, lines 4-19), which would obviously, to one of ordinary skill, suggest trimethyl methylammonium chloride.

Regarding claims 2-4, 9-11, and 17, Bleys '149 discloses trialllyl methylammonium chloride crosslinker (see column 5, lines 52-55) and up to 5-10 per 100 parts per weight crosslinker (see column 4, lines 10-28), which would suggest up to 90-95 parts acrylonitrile.

Regarding claims 5 and 13, Bleys '149 discloses dispersed acrylonitrile particles (see column 3, lines 47-51) and forming a foam (see column 4, line 10), which would suggest a substantially homogenous and spherical shape to an ordinary artisan.

Regarding claims 6-7 and 14-15, a paper substrate would have been obvious to one of ordinary skill in the art because Bleys '149 discloses tampons (see column 1, lines 5-7), which would at least suggest paper and/or fibers.

Regarding claims 12 and 16, Bleys '149 discloses mixing with 70 pbw of water (Example 1), which would at least suggest a water bath.

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***Allowable Subject Matter***

4. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to dissolve 2-5% polyacrylonitrile in a solvent to form a matrix solution in the method of forming a composite medium of the instant claim 9 because a significantly larger amount would have been suggested by the prior art.

***Response to Arguments***

5. Applicant's arguments filed 10/27/06 have been fully considered but they are not persuasive.

It is argued that Bleys does not teach or suggest the limitation... a polyacrylonitrile matrix. This is not persuasive because Applicant appears to admit that Bleys discloses polymerization of acrylonitrile (column 3, lines 47-52), which would obviously, to one of ordinary skill in the art, suggest polyacrylonitrile.

It is argued that by referring to "dispersed acrylonitrile..." and not polyacrylonitrile. This is not

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persuasive because Applicant appears to suggest that the presence of other monomers would prevent any polyacrylonitrile from forming. However, the mere presence of other monomers in the presence of polymerized acrylonitrile would not prevent at least some polyacrylonitrile from forming and Applicant does not claim a composite wherein no other polymers are present besides acrylonitrile. It is noted that the features upon which applicant relies (i.e., a composite comprising no other polymers other than polyacrylonitrile) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that the Examiner states that... polymerization of acrylonitrile. This is not persuasive for the reasons above.

It is argued that Bley also does not teach or suggest... trialkyl methylammonium compound. This is not persuasive because Applicant appears to admit that the only potential perceived difference is the presence of double bonds and that both, in any case, contain carbon-carbon single bonds. Thus, contrary to Applicant's assertion, "objective reasons" have been provided to support the Examiner's position. And, in any case, Girot '734 discloses "trimethyl" ammonium chloride (see Examples 2 and 17).



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One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that the Examiner states that "Applicant appears to admit... invention was made." This is not persuasive for the reasons above.

It is argued that the Examiner also states that... carbon-carbon single bonds. This is not persuasive because the mere potential presence of single and double bonds, and thus the potential "different reactivities", would not have rendered the claimed trialkyl methylammonium unobvious over the prior art teaching of triallyl methylammonium. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). And, in any case, Girot '734 discloses "trimethyl" ammonium chloride (see Examples 2 and 17).

It is argued that the Examiner states that trialkyl methylammonium chloride... either trialkyl or triallyl. This is not persuasive because Applicant appears to admit that the

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compounds "contain the same elements", which would obviously, to one of ordinary skill, at least suggest the interchanging of the two. And, in any case, Girot '734 discloses "trimethyl" ammonium chloride (see Examples 2 and 17).

It is argued that Applicants also respectfully submit... is, at best, specious. This is not persuasive because Applicant relies on what is "known in the art" rather than what is specifically claimed and also because one skilled in the art might understand alkyl as including groups which contain double bonds without further specification, since alkyl is a much more generically used term than allyl in the art. And, in any case, even if one skilled in the art would assume alkyl to exclude double bonds, it still would have been obvious to use alkyl groups in view of Applicant's admission that two are identical except for the trivial difference of saturation and unsaturation.

It is argued that finally, Bleys does not teach or suggest the limitation... "...polyacrylonitrile matrix." This is not persuasive because both polyacrylonitrile and trialkyl methylammonium chloride are suggest. Specifically, Bleys discloses polymerization of acrylonitrile (column 3, lines 47-52), which would obviously, to one of ordinary skill in the art, suggest polyacrylonitrile; and Bleys '149 discloses triallyl

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methyammonium chloride crosslinker (see column 5, lines 52-55). And Girot '734 discloses "trimethyl" ammonium chloride (see Examples 2 and 17).

It is argued that applicants also respectfully submit that since the triallyl methyammonium chloride... resulting polyurethane film. This is not persuasive because Applicant does not claim a polyurethane film or a methyammonium chloride not used as crosslinker. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a film wherein trialkyl methyammonium is not used as a crosslinker) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that the cited references also do not provide a motivation to combine to produce the claimed invention. This is not persuasive because In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion,

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or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "trimethyl" of Girot as the "triallyl" group of the methylammonium chloride of Bleys because Bleys discloses "triallyl" methylammonium chloride in a sorbent and Girot discloses the trimethyl ammonium chloride for use in preparation of exchange resins for adsorbent applications (see Examples 2 and 17 and column 12, lines 4-19), which would obviously, to one of ordinary skill, suggest trimethyl methylammonium chloride.

It is argued that nothing in Bleys suggest the desirability... methylammonium chloride. This is not persuasive for the reasons above.

It is argued that furthermore, Applicants respectfully submit... could not function as a crosslinker. This is not persuasive because Applicant does not claim a crosslinker or lack thereof (see *In re Van Geuns*, above) and, in any case, Girot discloses the trimethyl ammonium chloride for use in preparation of exchange resins for adsorbent applications (see Examples 2 and 17 and column 12, lines 4-19).

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It is argued that claims 2-7 are allowable. This is not persuasive for reasons already of record.

It is argued that Bleys also does not teach or suggest... produce the claimed invention. This is not persuasive because Applicant appears to suggest that the presence of other monomers would prevent any polyacrylonitrile from forming. However, the mere presence of other monomers in the presence of polymerized acrylonitrile would not prevent at least some polyacrylonitrile from forming and Applicant does not claim a composite wherein no other polymers are present besides acrylonitrile. It is noted that the features upon which applicant relies (i.e., a composite comprising no other polymers other than polyacrylonitrile) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

It is argued that claims 9-17 are allowable from claim 8. This is not persuasive for reasons already of record.

It is argued that the cited references do not teach or suggest all of the limitations of claim 1. This is not persuasive because Bleys '149 discloses an absorbent comprising dispersed acrylonitrile (see column 3, lines 47-51) and Girot

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'734 discloses "trimethyl" ammonium chloride (see Examples 2 and 17).

It is argued that the Examiner relies on Examples 2 and 17 of Girot as teaching "trimethyl ammonium chloride." This is not persuasive it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "trimethyl" of Girot as the "triallyl" group of the methylammonium chloride of Bleys because Bleys discloses "triallyl" methylammonium chloride in a sorbent and Girot discloses the trimethyl ammonium chloride for use in preparation of exchange resins for adsorbent applications (see Examples 2 and 17 and column 12, lines 4-19).

It is argued that the Examiner states that "it would have been obvious... preparation of exchange resins." This is not persuasive because any statement of obviousness is "conclusory" to the extent that it is a conclusion based on the evidence presented in the prior art.

It is argued that the cited references also do not provide a motivation to combine to produce the claimed invention. This is not persuasive because the "objective reason" for why it would have been obvious to combine the cited prior art teachings was provided. Specifically, the examiner recognizes that obviousness can only be established by combining or modifying

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the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the "trimethyl" of Girot as the "triallyl" group of the methylammonium chloride of Bleys because Bleys discloses "triallyl" methylammonium chloride in a sorbent and Girot discloses the trimethyl ammonium chloride for use in preparation of exchange resins for adsorbent applications (see Examples 2 and 17 and column 12, lines 4-19).

It is argued that furthermore, even if Bleys and Girot were combined... not trimethyl ammonium chloride. This is not persuasive because it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the "triallyl" of Bleys with the "trimethyl" of Girot for reasons already of record.

It is argued that the cited references also do not teach... the claimed invention. This is not persuasive for the reasons above.

#### **Conclusion**

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6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ